

## Section 1-1: Points, Lines, and Planes

By the end of this lesson, you should be able to answer:

- How do you identify and model points, lines, and planes?
- How do you identify intersecting lines and planes?

Define the following:

1. Undefined Term

2. Point

3. Line

4. Plane

5. Collinear

6. Coplanar

7. Intersection

8. Definition

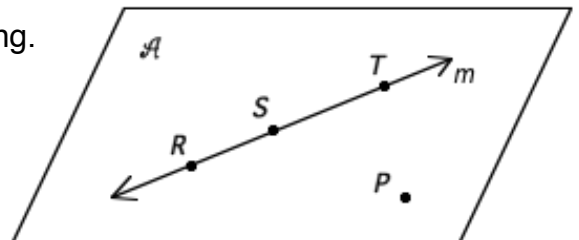
9. Defined Term

10. Space

*Example 1:* Use the figure to name each of the following.

a. A line containing point  $R$

b. A plane containing point  $P$



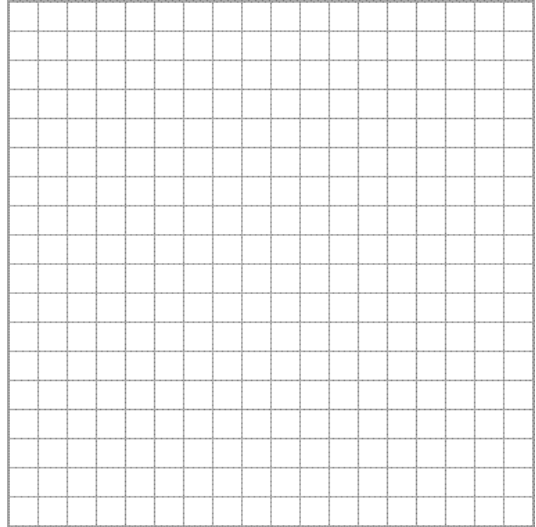
*Example 2:* Name the geometric shape modeled by each object.

a. A crack in a sidewalk

b. A drop of water on the sidewalk

*Example 3:* Draw and label plane  $T$  that contains lines  $\overleftrightarrow{UV}$  and  $\overleftrightarrow{WX}$  such that the lines intersect at point  $Z$ . Then, add a point  $H$  to plane  $T$  so that it is not collinear with  $\overleftrightarrow{UV}$  or  $\overleftrightarrow{WX}$ .

*Example 4:* Points  $A(-3, 3)$  and  $B(2, -5)$  form a line. Graph the points and line on the coordinate plane, then add a point  $C$  so that it is collinear with  $A$  and  $B$ .



*Example 5:* Answer the following.

- a. How many points are needed to form a line?
- b. How many points are needed to form a plane?
- c. What is the intersection of two planes?
- d. What is the intersection of two lines?
- e. What is the difference between *collinear* and *coplanar*?

Problem Set:

"In terms of being late or not starting at all, then it's never too late."  
- Alison Headley